

Please amend claim 4 as follows:

C2 4. (Amended) The imaging module of claim 1, further comprising a frame and at least one planar optical component and wherein said frame comprises sidewalls having resilient fingers formed therein for receiving and securing said optical component in said frame in a stationary position in said frame without use of adhesives or any additional mechanical securing apparatuses or agents.

5. The imaging module of claim 1, wherein said circuit board carries essentially all image sensor signal processing circuitry, image capture circuitry, and decoding and or recognizing circuitry of an optical reader in which said module is to be installed.

6. (Last Amended June 26, 2002) The imaging module of claim 1, wherein said image sensor is a 2D image sensor, wherein said at least one light source is a plurality of aiming light sources, and wherein said module includes optics associated with said plurality of aiming light sources for projecting a solitary horizontal line aiming pattern in a target area.

Please amend claim 7 as follows:

C3 7. (Twice Amended) The imaging module of claim 1, herein said imaging module further includes a frame, wherein said frame is a one-piece unit defining top, bottom and side sidewalls of said module, and wherein said sidewalls and said circuit board define a cubic rectangular configuration.

8. (Last Amended June 26, 2002) The imaging module of claim 7, wherein said imaging module further comprises a lens assembly and wherein said frame is a one-piece unit further comprising a retainer section retaining said lens assembly.

9. (Last Amended June 26, 2002) The imaging module of claim 7, wherein said top and side sidewalls of said one-piece frame define a partially enclosed contained area, and wherein said at least one light source and said image sensor are disposed inside said

contained area, whereby said at least one light source and said image sensor are structurally protected by said frame.

Please amend claim 10 as follows:

10. (Twice Amended) The imaging module of claim 1, wherein said imaging module further includes a frame, wherein said frame includes top and side sidewalls, and wherein a combination of said circuit board and said top and side sidewalls defines a partially enclosed contained area and delimits an exterior of said module, and wherein said at least one light source is disposed inside said contained area, whereby said at least one light source is structurally protected by a combination of said circuit board and said frame.

11. (Twice Amended) The imaging module of claim 1, wherein said imaging module further includes a frame, wherein said frame includes top and side sidewalls and wherein a combination of said circuit board and said top and side sidewalls defines a partially enclosed contained area and delimits an exterior of said module, and wherein said at least one light source and said image sensor are disposed inside said contained area, whereby said at least one light source and said image sensor are structurally protected by a combination of said circuit board and said frame.

12. (Last Amended June 26, 2002) The imaging module of claim 10, wherein essentially an entirety of light sources of said module are incorporated in said contained area.

Please amend claim 13 as follows:

13. (Twice Amended) The imaging module of claim 1, further including a frame, wherein said frame includes a back plate having a center recess for receiving and aligning said image sensor.

Please amend claim 14 as follows:

14. (Twice Amended) The imaging module of claim 1, further including a frame,

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cont.
wherein said frame includes a back plate having a center recess for receiving and aligning said image sensor and at least one side recess for accommodating electrical components emanating forwardly of said circuit board.

15. (Last Amended June 26, 2002) The imaging module of claim 1, wherein said at least one light source comprises a pair of aiming light sources, and wherein said module further comprises an aperture plate having a pair of apertured domes disposed over said light sources for shaping light emanating from said aiming light sources.

Please amend claim 16 as follows:

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16. (Twice Amended) The imaging module of claim 1, further including a frame, wherein said frame includes a back plate, and wherein said at least one light source further includes illumination and aiming LEDs having leads extending through said back plate and being electrically connected to said circuit board.

17. (Last Amended June 26, 2002) The imaging module of claim 1, wherein said at least one light source further includes illumination and aiming LEDs being electrically connected to said circuit board, and wherein said module further comprises:

an aperture plate including domes having slit apertures for shaping light emanating from said aiming LEDs being fit over said aiming LEDs; and

a diffuser plate including optics for diffusing light emanating from said illumination LEDs being positioned in said optical reader forward of said aperture plate.

18. The imaging module of claim 17, further including means adapting said diffuser plate to be snap-fit onto said frame.

19. The imaging module of claim 17, further comprising:

means adapting said diffuser plate to be snap-fit onto said frame; and

means adapting said aperture plate to be biased toward said back plate when said

diffuser plate is snap-fit onto said frame.

Please amend claim 39 as follows:

39. (Twice Amended) An optical reader for reading indicia, said optical reader comprising:

a housing; and

an imaging module disposed in said housing, said imaging module including:

a circuit board;

an image sensor carried by said circuit board; and

at least one light source for illuminating at least part of a target area outside of said housing wherein said at least one light source is mounted to said circuit board, whereby said circuit board carries both of said image sensor and said at least one light source.

41. (Last Amended June 26, 2002) The optical reader of claim 39, wherein said at least one light source includes at least one illumination light source and at least one aiming light source, and wherein said at least one illumination light source and said at least one aiming light source are each mounted to said circuit board, whereby said circuit board carries each of said image sensor, said at least one illumination light source and said at least one aiming light source.

Please amend claim 42 as follows:

42. (Amended) The optical reader of claim 39, further comprising a frame and at least one planar optical component, wherein said frame comprises sidewalls having resilient fingers formed therein for receiving and securing said optical component in said frame in a stationary position in said frame without use of adhesives or any additional mechanical securing apparatuses or agents.

43. The optical reader of claim 39, wherein said circuit board carries essentially all image sensor signal processing circuitry, image capture circuitry, and decoding and or recognizing circuitry of an optical reader in which said module is to be installed.

Please amend claim 44 as follows:

44. (Last Amended June 26, 2002) The optical reader of claim 39, wherein said image sensor is a 2D image sensor, wherein said at least one light source is a plurality of aiming light sources and wherein said module includes optics associated with said plurality of aiming light source for projecting a solitary horizontal line aiming pattern in a target area.

Please amend claim 45 as follows:

45. (Twice Amended) The optical reader of claim 39, further comprising a frame, wherein said frame is a one-piece unit defining top bottom and side sidewalls of said module, and wherein said sidewalls and said circuit board define a cubic rectangular configuration.

Please amend claim 46 as follows:

46. (Twice Amended) The optical reader of claim 45, further comprising a frame, wherein said imaging module further comprises a lens assembly and wherein said frame is a one-piece unit further comprising a retainer section retaining said lens assembly.

Please amend claim 47 as follows:

47. (Twice Amended) The optical reader of claim 45, further comprising a frame, wherein said top and side sidewalls of said one-piece frame define a partially enclosed contained area, and wherein said at least one illumination source and said image sensor are disposed inside said contained area, whereby said at least one illumination source and said image sensor are structurally protected by said frame.

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cont.

{ Please amend claim 48 as follows: }

48. (Twice Amended) The optical reader of claim 39, further comprising a frame, wherein said frame includes top and side sidewalls, and wherein a combination of said circuit board and said top and side sidewalls defines a partially enclosed contained area and delimits an exterior of said module, and wherein said at least one illumination source is disposed inside said contained area, whereby said at least one illumination source is structurally protected by a combination of said circuit board and said frame.

{ Please amend claim 49 as follows: }

49. (Twice Amended) The optical reader of claim 39, further comprising a frame, wherein said frame includes top and side sidewalls and wherein a combination of said circuit board and said top and side sidewalls defines a partially enclosed contained area and delimits an exterior of said module, and wherein said at least one source and said image sensor are disposed inside said contained area, whereby said at least one illumination source and said image sensor are structurally protected by a combination of said circuit board and said frame.

50. (Last Amended June 26, 2002) The optical reader of claim 48, wherein essentially an entirety of illumination sources of said module are incorporated in said contained area.

Please amend claim 51 as follows:

51. (Amended) The optical reader of claim 39, further comprising a frame, wherein said frame includes a back plate having a center recess for receiving and aligning said image sensor.

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{ Please amend claim 52 as follows: }

52. (Amended) The optical reader of claim 39, further comprising a frame, wherein said frame includes a back plate having a center recess for receiving and aligning said image sensor and at least one side recess for accommodating electrical components extending

C10
C10 forwardly of said circuit board.

53. The optical reader of claim 39, further including a pair of aiming light sources, and an aperture plate having a pair of apertured domes disposed over said light sources for shaping light emanating from said aiming light sources.

Please amend claim 54 as follows:

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54. (Amended) The optical reader of claim 39, further comprising a frame, wherein said frame includes a back plate, and wherein said at least one illumination source further includes illumination and aiming LEDs having leads extending through said back plate and being electrically connected to said circuit board.

55. The optical reader of claim 39, wherein said at least one illumination source further includes illumination and aiming LEDs being electrically connected to said circuit board, and wherein said module further comprises:

an aperture plate including domes having slit apertures for shaping light emanating from said aiming LEDs being fit over said aiming LEDs; and

a diffuser plate including optics for diffusing light emanating from said illumination LEDs being positioned in said optical reader forward of said aperture plate.

Please amend claim 56 as follows:

56. (Amended) The optical reader of claim 55, further comprising a frame and further including means adapting said diffuser plate to be snap-fit onto said frame.

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{ Please amend claim 57 as follows: }

57. (Amended) The optical reader of claim 55, further comprising:

a frame;

means adapting said diffuser plate to be snap-fit onto said frame; and

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cont. means adapting said aperture plate to be biased toward said back plate when said
diffuser plate is snap-fit onto said frame.

58. The imaging module of claim 1, wherein said at least one light source is an illumination light source.

59. The imaging module of claim 58, wherein said at least one light source is a plurality of illumination light sources.

60. The imaging module of claim 1, wherein said at least one light sources is an aiming light source.

61. The imaging module of claim 1, wherein said at least one light source is a plurality of aiming light sources.

62. The optical reader of claim 39, wherein said at least one light source is an illumination light source.

63. The optical reader of claim 39, wherein said at least one light source is a plurality of illumination light sources.

64. The optical reader of claim 39, wherein said at least one light source is an aiming light source.

65. The optical reader of claim 39, wherein said at least one light source is a plurality of aiming light source.

66. An imaging module comprising:
a frame having sidewalls;
a circuit board mounted to said frame;

an image sensor carried by said circuit board;
at least one light source for illuminating at least part of a target area;
a planar optical member carrying at least one optical component; and
resilient fingers formed in said sidewalls for receiving and securing said planar optical member in a stationary position in said frame.

67. The module of claim 66, wherein said planar optical member delimits a front side of said module, and wherein said circuit board delimits a rear side of said module.

67. The module of claim 66, wherein said planar optical member delimits a front side of said module, and wherein said circuit board delimits a rear side of said module.

68. An imaging module comprising:
a one-piece frame including a lens assembly retainer section and top and side sidewalls delimiting an area;
a circuit board;
an imaging assembly including a sensor carried by said circuit board, and a lens assembly disposed in said retainer section; and
at least one light source for illuminating at least part of a target area.

69. The imaging module of claim 68, wherein said at least one light source is carried by said circuit board.

70. The imaging module of claim 69, wherein said at least one light source is an illumination light source.

71. The imaging module of claim 69, wherein said at least one light source is an aiming light source.

72. An imaging module comprising:
a circuit board;
an image sensor;
an aiming light source for projecting at least part of an aiming pattern on a target area;
and
an opaque dome disposed over said aiming light source, said opaque dome having an aperture.

73. The imaging module of 72, wherein said image sensor and said aiming light source are disposed on said circuit board.

74. The imaging module of claim 73, wherein said imaging module further includes an illumination light source disposed on said circuit board.

Please add new claims 75-82 as follows:

75. The imaging module of claim 1, wherein said at least one light source is an LED.

76. The imaging module of claim 1, wherein said at least one light source is a leaded LED.

77. The imaging module of claim 1, wherein said at least one light source is a leaded LED having leads extending through said common circuit board.

78. The imaging module of claim 1, further comprising a frame comprising a retainer for receiving a lens assembly.

79. The reader of claim 39, wherein said at least one light source is an LED.